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SECRET

FIRST MARINE AIR WARNING GROUP
NINTH MARINE AIRCRAFT WING,FMF
U. S. MARINE CORPS AIR STATION
CHERRY POINT, NORTH CAROLINA

1 January, 1945.

From: The Commanding Officer.
To: History Unit, OP-33-J-6, Office of Editorial Research, Aviation Training Division, Chief of Naval Operations, Navy Department, Washington, D. C.
Via: (1) The Commanding General, Ninth Marine Aircraft Wing, Fleet Marine Force, U. S. Marine Corps Air Station, Cherry Point, North Carolina.
(2) The Commandant of the Marine Corps, Washington, D. C.

Subject: Unit History, forwarding of.

References: (a) Aviation Circular Letter No 77-44, dated 25 July, 1944.
(b) Aviation Circular Letter No 92-44, dated 19 September, 1944.

Enclosure: (A) History of the First Marine Air Warning Group, 1 July, 1943, to 31 December, 1944.

1. In accordance with references (a) and (b), enclosure (A) is forwarded herewith.

J. E. WEBB.

AWG1-902-SEK/jt 1st Endorsement 5 January, 1945.
NINTH MARINE AIRCRAFT WING,FMF, U.S. MARINE CORPS AIR STATION, CHERRY POINT, N.C.

From: The Commanding General.
To: History Unit, OP-33-J-6, Office of Editorial Research, Aviation Training Division, Chief of Naval Operations, Navy Department, Washington, D. C.
Via: (1) The Commandant of the Marine Corps, Navy Department, Arlington Annex, Washington 25, D. C.

1. Forwarded.

2. Transmission by Registered Guard Mail or U. S. registered mail is authorized in accordance with Article 76 (15) (e) and (f), U. S. Navy Regulations.

C. N. FOREMAN,
By direction.

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HISTORY OF THE FIRST MARINE AIR WARNING GROUP

1 July, 1943 - 31 December, 1944

Enclosure: "A"

I

CHRONOLOGY

The First Marine Air Warning Group and Headquarters and Service Squadron One were commissioned on 1 July, 1943, by authority of the Third Marine Aircraft Wing General Order Number 11-1943, dated 25 June, 1943. Lieutenant Colonel (now Colonel) Walter L. J. Bayler, USMC, formerly of Lebanon, Pennsylvania, was designated Group Commander, and Captain George A. Benney, Jr., USMCR, of Pittsburgh, Pennsylvania, served as Group Adjutant with the additional duty of Commanding Officer of Headquarters and Service Squadron. Since that time there have been a total of nineteen squadrons commissioned, fifteen squadrons transferred from the group, one additional squadron moved on change of station orders, and two changes of group commanders. A brief chronology is given below.

1 July, 1943	First Marine Air Warning Group and Headquarters and Service Squadron One commissioned.
1 September, 1943	Air Warning Squadron One commissioned.
15 September, 1943	Air Warning Squadron Two (tentative) establishes air warning unit at the Marine Corps Auxiliary Air Facility, Oak Grove Field, New Bern, North Carolina.
25 September, 1943	Air Warning Squadron Two commissioned.
12 October, 1943	Air Warning Squadron Three commissioned.
1 November, 1943	Air Warning Squadron Four commissioned.
15 November, 1943	Air Warning Squadrons One and Two transferred to Air Warning Group Two.
1 December, 1943	Air Warning Squadron (air transportable) Five commissioned.
6 December, 1943	Air Warning Squadron Three transferred to Air Warning Group Two.

30 December, 1943	Air Warning Squadron Four transferred to Air Warning Group Two.
1 January, 1944	Air Warning Squadron Six and Air Warning Squadron (air transportable) Ten commissioned.
1 February, 1944	Air Warning Squadron Seven and Air Warning Squadron (air transportable) Fifteen commissioned.
31 January - 10 February, 1944	Air Warning Squadron (air transportable) Five transferred by air to Air Warning Group Two.
1 March, 1944	Air Warning Squadron Eight and Air Warning Squadron (air transportable) Twenty commissioned. Air Warning Squadron Six and Air Warning Squadron (air transportable) Ten transferred to Air Warning Group Two.
1 April, 1944	Air Warning Squadrons Nine and Eleven commissioned. Air Warning Squadron Seven and Air Warning Squadron (air transportable) Fifteen transferred to Air Warning Group Two. Group detached from Third Marine Aircraft Wing, FMF, to Ninth Marine Aircraft Wing, FMF.
5 April, 1944	Lieutenant Colonel Ethridge C. Best, USMC, formerly of Houston, Texas, succeeds Colonel Walter L. J. Bayler, USMC, detached, as group commander.
17 April, 1944	Air Warning Squadron Eleven establishes air warning unit at the Marine Corps Auxiliary Air Facility, Bogue Field, Morehead City, North Carolina.

1 May, 1944	Air Warning Squadron Twelve commissioned. Air Warning Squadron Eight and Air Warning Squadron (air transportable) Twenty transferred to Air Warning Group Two.
5 May, 1944	Air Warning Squadron Thirteen commissioned.
1 June, 1944	Air Warning Squadrons Fourteen and Sixteen commissioned.
5 June, 1944	Air Warning Squadrons Nine and Eleven transferred to Air Warning Group Two.
10 August, 1944	Air Warning Squadron Seventeen commissioned. Air Warning Squadron Thirteen transferred to the Naval Air Station, Vero Beach, Florida.
15 August, 1944	Air Warning Squadron Twelve transferred to Air Warning Group Two.
1 September, 1944	Air Warning Squadron Eighteen commissioned.
16 November, 1944	Major James E. Webb, USMCR, formerly of Oxford, North Carolina, succeeds Lieutenant Colonel Ethridge C. Best, USMC, detached, as group commander.
27 November, 1944	Air Warning Squadron Fourteen moved to the Marine Corps Auxiliary Air Facility, Congaree Field, Columbia, South Carolina.

II

NARRATIVE

One of the outstanding technical advances of World War II was the development of radar devices for use in air defense. Along with other military services, the Marine Corps took early cognizance of the new science. During the winter of 1941-42, tables of organization increasing the material and personnel allowances of Marine fighter groups and base defense groups were issued in order to provide an elementary air warning and fighter control system. In addition, a night fighter organization was established with provision made for GCI (ground control of intercept) personnel and equipment. At the time this organization was made, combat experience with the new devices was limited, but it soon became apparent that some change must be made because the addition of air warning personnel and equipment impaired the mobility of the basic aircraft units while at the same time restricting the best tactical employment of air warning units by subordinating them to unrelated necessities of the parent organizations.

Recognizing these imperfections, the Commandant in February, 1943, convened a radar policy board to make a study of radar and related matters for the Marine Corps. The findings of the board were embodied in a report dated 17 March, 1943, and approved by the Commandant, 4 May, 1943.[1]

Acting upon the recommendations contained in the report of the radar policy board, Headquarters and Service Squadron One of the First Marine Air Warning Group was commissioned 1 July, 1943, as an integral part of Marine aviation, under the direct supervision of the Commanding General of the Third Marine Aircraft Wing, located at the Marine Corps Air Station, Cherry Point, North Carolina.[2]

The commissioning of the first air warning unit by no means ended the quest for the proper tactical employment of radar devices in Marine Corps air defense. Rather, it accelerated it. The Commandant had approved on 15 May, 1943, a Standing Operating Procedure for Radar Air and Surface Warning and Radar Fire Control in the Marine Corps. The doctrine set forth in this directive envisaged an air warning organization along the following lines:

(a) An air warning group composed of a headquarters and service squadron, four air warning squadrons, and one air transportable air warning squadron.

(b) Each air warning squadron was divided into five divisions: a headquarters and service division, a long range air warning division of two sections or teams, a short range air warning division of three sections, an interception division, and a filter division.

(c) Each air transportable air warning squadron consisted of five divisions: a headquarters and service division, a short range air warning division of three sections, a very light short range air warning division of three sections, an air transportable interception division, and a filter division.

(d) One air warning group was to be attached to each Marine aircraft wing with an air warning squadron for each VMF and VMSB group. The air transportable squadron was to be employed in the assault phase of landing operations.

It is apparent from the organization outlined above that the air warning squadrons were intended to operate almost solely as "warning" units. Control of interceptions was vested in the fighter operations room of an aircraft command, and controllers were attached to the headquarters of aircraft groups to direct such interceptions.

The tables of organization for air warning units (D-691, D-692, D-694, and D-695), approved 25 May, 1943, were developed in accordance with the above ideas. For the basic air warning squadron, these tables established a personnel allowance of twenty-one officers, 167 Marine enlisted, and three Hospital Corpsmen. The interception division consisted of one radar officer and two officer controllers along

with seventeen enlisted men. No provision was made for a GCI section. As noted above GCI controllers and equipment were assigned only to night fighter squadrons.[3] This arrangement was considered unsatisfactory and on 13 August, 1943, Colonel Edward A Montgomery, USMC, commanding Marine Night Fighter Group Fifty-three, recommended to the Commandant that the tables of organization of night fighter and air warning squadrons be modified by the transfer of all controllers, fighter direction, and ground radar maintenance personnel of the night fighter squadrons to the air warning squadrons. Colonel Montgomery reasoned that control personnel served no useful purpose without GCI equipment, and since air warning squadrons with equipment would presumably be located at all fighter bases, the elimination of fighter directors from the night fighter squadrons would result in a more efficient use of control personnel.[4] This change was approved, and on 1 October, 1943, Group Fifty-three turned over the SCR-588 installation located between the runways at Cherry Point (better known as Project 88)[5] and transferred all control and ground radar personnel to the First Marine Air Warning Group. Some time during the late summer of 1943 fighter direction sections were also eliminated from Marine aircraft groups and assigned to the air warning program.[6]

These rapid changes in function and organization created many difficulties for those assigned the mission of forming and sending out one air warning squadron each month.[7] To further complicate the situation, personnel were not being supplied rapidly enough to permit the commissioning and training of units. Securing approval of a suitable allowance of material and the procurement of equipment allowed caused additional difficulties. When commissioned the group consisted of three Marine officers and one Marine enlisted, and by the end of July, only seventeen Marine officers, one Navy officer, forty-five Marine enlisted, and one Hospital Corpsman were attached. However, a larger flow of personnel began in August and continued throughout the fall, though it was still insufficient to meet the requirements of the program.

Two air warning squadrons were commissioned in September, 1943, and began their training at Cherry Point and at the Marine Corps Auxiliary Air Facility, Oak Grove Field, New Bern, North Carolina.[8] The original table of organization having provided for a much different organization than the subsequent changes of plan made necessary, the Commandant on 14 October, 1943, approved a special table of organization for the use of these two squadrons.[9] The differences from the original are interesting. A total strength of fourteen officers, 185 Marine enlisted, and six Hospital Corpsmen was allowed. The squadrons were divided into a headquarters and service division, a long range air warning division of two sections, a short range air warning division of three sections, and a control division. The filter and interception divisions no longer appeared. In their stead was the control division consisting of one radar officer, seven officer controllers, and fifty-nine Marine enlisted. Three controllers were qualified for GCI work. The radar sets allowed were one SCR-527, two SCR-270s, and three SCR-602s. The filter division had been eliminated with the idea that the SCR-527 van was to serve as an operations room.

With a definite basis upon which to work the group proceeded with its mission, forming two more air warning squadrons and one air transportable squadron before the end of December, and transferring four squadrons to Air Warning Group Two at the Marine Corps Air Depot, Miramar, San Diego, California, during the same period.[10]

However, all was not to be smooth sailing. New projects were developing, and on 4 November, 1943, the Director of Aviation wrote that a plan was being considered to increase the air warning program to a total of thirty-two squadrons (four to be air transportable), and all to be commissioned by 31 December, 1944. To meet this program an average of better than two squadrons per month must be formed during the calendar year 1944.[11] By the end of 1943 this proposal had been placed in effect, and on 1 January, 1944, Air Warning Squadron Six and Air Warning Squadron (air transportable) Ten were commissioned.[12]

Such commissionings continued without change until June, 1944, when the program

was halted temporarily by serious personnel deficiencies.[13] These shortages were so severe that on 8 May, 1944, the group commander, Lieutenant Colonel Ethridge C. Best, USMC, requested that the readiness dates of Air Warning Squadrons Nine, Eleven, Twelve, and Thirteen be delayed for one month. He stated that the training program of two months for each squadron was based on the assumption that the personnel complement for each squadron would be physically present in group headquarters undergoing specialist training at least one month prior to the commissioning date. Each squadron would then begin its team training as a unit from the date of commissioning and continue until transferred two months later to Air Warning Group Two. Contrary to this basic minimum, the actual situation was as follows: Air Warning Squadron Nine was commissioned with personnel deficiencies of 65% among the officers and 58% among the enlisted men. A month later with only three weeks of operations remaining, the squadron still lacked 35% of its officers and nearly 40% of its enlisted men. The same figures held for Squadron Eleven except that at the end of the first month only 60% of its officer allowance was present. Squadrons Twelve and Thirteen, just commissioned, had only 30% of the allowed strength in officers and approximately 17% of their enlisted strength. These figures were even more alarming when it was considered that shortages were not equally distributed among all classes of personnel. Very serious deficiencies existed in GCI and radio operators, specialties of the utmost importance in air warning. Colonel Christian F. Schilt, USMC, commanding the Ninth Marine Aircraft Wing, reluctantly concurred in the recommendations of the group commander, stating that the program had fallen behind due to the failure of the specialist schools to supply its needs and also to the increased allowance of personnel authorized for air warning squadrons.[14]

The receipt of this letter in Washington resulted in a telephone conversation between Major John A. Saxten, USMC, group executive officer, and Colonel W. L. J. Bayler, of the Air Defense Section of the Division of Aviation, on 12 May, 1944. Colonel Bayler stated that the departures of Squadrons Nine and Eleven could not be

delayed, but that Squadrons Twelve and Thirteen would remain in Cherry Point an additional month. Squadrons Fourteen and Sixteen would be commissioned as scheduled on 1 June, 1944, but no further squadrons would be formed until August.[15]

As was mentioned by Colonel Schilt, still further changes had occurred in the tables of organization. Air Warning Squadron Three had formed on the same temporary plan allowed for Squadrons One and Two. Squadron Four was commissioned and trained under that table, but just prior to its transfer to the West Coast, instructions were received from Washington to increase the enlisted strength from 185 to 220. The additional men for the most part represented the inclusion of two SCR-602 crews. The group was unable to supply more than 205 enlisted personnel, and the squadron was transferred at that strength. Subsequently, Squadrons Six and Seven were organized and transferred with a Marine enlisted strength of 220.

On 18 March, 1944, the Commandant approved Table of Organization E-691 for air warning squadrons. The new directive provided for a total strength of twenty officers, 259 Marine enlisted, and six Hospital Corpsmen. The development of the ideas of employment of air warning units may be seen in the arrangement prescribed thereby. There was an overall separation of administrative and operating units. The first consisted of headquarters, commissary, supply, transportation, and medical sections. The operating personnel were grouped into a control section, a GCI section, a D/F (direction finding) section, two long-range radar sections, three lightweight (short-range) radar sections, and a wire section. The significant differences from the organization prescribed previously were that a control section and a GCI section had superseded the former control division, and a D/F section and a wire section had been added. The old control division had consisted of a radar officer, seven controllers (three qualified for GCI work), and fifty-nine enlisted. The new control section consisted of five day controllers, three filter officers,[16] and forty-seven enlisted men. The GCI section included one radar officer, four night (GCI) controllers (the squadron commander was also qualified as a GCI controller), and forty-one

enlisted men. The D/F section comprised nineteen enlisted and the wire section fifteen. These two units along with the radio and wire personnel in other sections were under the direction and control of the communications officer in the headquarters section.

For the most part, the new table of organization indicated a growing emphasis upon the necessity of establishing an air defense control center (ADCC). The expedient of using the SCR-527 van as a control center had proved unworkable under combat conditions. The maintenance of adequate status boards from the point of view of space alone required something else. Apart from this consideration, the direction of interception of mass raids, the interception of more than one raid simultaneously, and the control of the combat air patrol so increased the duties of the control center that both more space and more personnel were required. Finally, it became apparent that the ADCC was the best instrument available to keep the fighter commander informed of the tactical situation.[17]

Squadrons Eight through Eighteen, excluding the air transportable Squadrons Ten and Fifteen, were formed under Table of Organization E-691. However, new tactical and logistic observations led to further changes, and the Commandant approved Table of Organization F-691 on 1 November, 1944. It provided for an overall strength of nineteen officers, 228 Marine enlisted, and six Hospital Corpsmen. The reduction in personnel was effected by a general streamlining and by the reduction in the number of light weight radar teams. The radar equipment was to be of the new Navy types: one SP-1M (partially superseding the SCR-527), two SK-1Ms (superseding the SCR-270s), and two AN/TPS-1Bs (superseding <u>three</u> SCR-602s).[18] A different grouping of the personnel indicated a changed tactical conception. Table of Organization F-691 provided for an administrative division with headquarters, commissary, supply, transportation, and medical sections. It divided the operational personnel into assault and rear echelons. The former consisted of an ADCC section, a wire section, a lightweight radar division of two sections, and a ground observer section. It was to

be attached to assault divisions during landing operations and to conduct air warning and control activities during an assault phase. The rear echelon contained a GCI section, a D/F section, a long range radar divsion of two sections, and an ADCC section. It was not to participate in the first phases of landing operations but would come ashore at the earliest possible moment and in combination with the assault echelon establish a complete air warning and control system.[19]

The operating plan established by the new table of organization was the result of the evolution of tactical thought modified by combat experience as applied particularly to the air transportable squadrons. In the same manner that the regular squadrons had been fashioned and refashioned, the air transportable squadron was refashioned, rechristened, and eventually eliminated altogether.

The original table of organization for air transportable squadrons (D-692), approved 25 May, 1943, was never used. On 1 November, 1943, the Commandant wrote the Commanding General of the Third Marine Aircraft Wing that it was his intention to organize Air Warning Squadron (air transportable) Five on 1 December, 1943, and upon the completion of its training to combat load the squadron and fly it to the West Coast. In connection with these plans it was stated that the Joint Chiefs of Staff had been informed that the minimum air warning and fighter control service required by an assault division on a landing was a Marine air transportable squadron as previously planned reinforced by long range radar units and not less than nine radio-equipped ground observer posts. In accordance with this the table of organization would be expanded to include a ground observer division of two officers and fifty-four enlisted men. It was further stated that short range air warning equipment would not soon be available, that air transportable operations room equipment must be improvised, and that air transportable GCI equipment was not thoroughly tested and, in any case, available only in limited quantities. Considering these things, the Commanding General was directed to prepare a doctrine for the use of the air transportable squadron which would include plans for combat loading in suitable

aircraft and surface vessels; to design and take action to procure all required special equipment; to make recommendations as to desirable changes in the tables of organization and equipment allowances; and, finally, to decide on the practicability of transportaing the squadron by air to the West Coast.[20]

With such a heavy program laid out, the group staff set to work. First Lieutenant Donald D. O'Neill, USMCR, who was to command Squadron Five, aided by Second Lieutenant Norris W. Matthews, SCR-602 radar officer, applied themselves to the task under the direction and with the active aid of Major Saxten. Lieutenant O'Neill made a flying trip to West Hampton, New York, to study the operations of the 726th Signal Air Warning Company of the Army, located at the Suffolk County Air Base.[21] A suggested table of organization and a tentative doctrine were prepared and forwarded by 26 November, 1943.[22] The organization thus prepared provided for a total strength of thirteen officers, 141 Marine enlisted, and four Hospital Corpsmen. It was divided into a headquarters and service division, a (light weight) search radar division, a control center division, and a ground observer division. The last was given an allowance of two officers and forty-eight men.[23]

While awaiting action on these matters, the squadron was commissioned on 1 December and began its training. Lieutenant O'Neill displayed great energy, unusual administrative capacity, and abundant initiative in carrying out his tasks. The squadron personnel was given an intensive program of combat conditioning along with the specialized training, and at the same time experiments were made in the feasibility of air transport. Test flights were made to outlying fields,[24] and then a more ambitious program was undertaken. With the cooperation of the Wing and the Naval Radar Training School at the Naval Air Station, St. Simons Island, Georgia, the assault echelon of the squadron was combat loaded in R4Ds and flown to St. Simons Island on 11-12 January, 1944. A bivouac was established on nearby Jeckyll Island, and a landing operation was conducted on 15 January in bitterly cold weather. Planes from the Naval Air Station, St. Simons, assisted with bombing and strafing runs while

the squadron set up and operated its equipment. The next two days were spent in conducting air warning and control operations and in chemical warfare and ground defense instruction. On 18 January the squadron returned to Cherry Point.[25]

As the squadron was to be transferred on 1 February to the West Coast, no further major operations were conducted. However, the table of organization was still in the process of revision. The proposed set-up submitted by the group had been modified to include an SCR-527 GCI crew since air transportable GCI equipment proved unavailable. The final strength recommended was fourteen officers, 163 Marine enlisted, and four Hospital Corpsmen. The squadron actually was transferred with a strength of fourteen officers, 167 Marine enlisted, and four Hospital Corpsmen.[26]

The movement of the squadron by air to the West Coast was not a happy experience. Insufficient planes, the use of new aircraft restricted to contact flying conditions, and uncertain weather resulted in a departure schedule prolonged over eleven days, the ground echelon of one officer and eleven men leaving 31 January and the last plane departing on 10 February.[27]

The experiences of Squadron Five with air transport and the addition of the SCR-527 made the designation "air transportable" an undesirable misnomer. It was recommended in March, 1944, that the name be changed to "Assault Air Warning Squadrons", and in July, 1944, this suggestion was adopted.[28]

Three more air transportable squadrons, numbered ten, fifteen, and twenty, were formed, trained, and transferred to the West Coast. With the exception of training in combat loading for air transport, these squadrons followed the trail blazed by Squadron Five. Combat conditioning, landing operations, and mobility were stressed.

By the fall of 1944, serious attention was being given to the whole air warning program by Marine Corps and Pacific Fleet headquarters. As a result of these deliberations, it was decided that the air transportable or assault air warning squadrons should be discontinued with the squadrons then formed either being decom-

missioned or converted to regular squadrons. The chief consideration was succinctly stated as follows:

> It is considered necessary that one air warning organization under a single control perform the functions of air warning and fighter direction at an objective, from assault through consolidation phases. This assures continuity of effort and maximum effectiveness of control.

Having reached this conclusion, the Marine Corps accordingly decommissioned Assault Air Warning Squadrons Five, Ten, Fifteen, and Twenty, and incorporated the functions formerly assigned to them in Table of Organization F-691 approved for air warning squadrons on 1 November, 1944.[29]

These new tactical ideas were accompanied by a radical change in the commissioning program of the group. The holiday permitted in July, 1944, was unofficially continued while Pacific Fleet headquarters made a study of its requirements. One squadron (AWS-17) was commissioned in August and another (AWS-18) in September, but no more were formed pending receipt of recommendations from the Pacific. A decision was not long in arriving. A dispatch from the Commandant on 6 November, 1944, directed that Squadrons Nine, Eleven, Twelve, Thirteen, Fourteen, Sixteen, Seventeen, and Eighteen assume the status of replacement training squadrons, at the same time maintaining readiness for overseas service.[30] In compliance with this directive the group reorganized its program to serve as a training and replacement center, meanwhile keeping itself prepared to commission five additional squadrons if need be.[31]

FOOTNOTES

1 See "Marine Air Warning Squadrons", in C.I.C., OPNAV 30/37, No 3-44, of May, 1944, pp. 1-2; and reference (a) to CMC secret ltr to CG, MAWPAC, AA-365-lff over 007D17443, dated 3 July, 1943.

2 The commissioning of Headquarters and Service Squadron for all practical purposes marked the commissioning of the group, since under Table of Organization D-694 the personnel allowed that squadron consisted solely of the group administrative office and staff with the group adjutant as commanding officer of the squadron. This must have been the thought of Marine Corps headquarters since the group itself was never commissioned in any other fashion.

3 See Standing Operating Procedure for Radar Air and Surface Warning and Radar Fire Control in the Marine Corps, p. 33.

4 CO, MNFG ltr to CMC, A3/EAM-rmj, dated 13 August, 1943, with endorsement of CO, 1st MAWG.

5 The use of project numbers was initiated by Group Fifty-three as a convenient way of referring to highly classified installations. Since the GCI set operated by them was an SCR-588, the term Project 88 was used in referring to it. This procedure was adopted by the First Air Warning Group which designated its first SCR-270 (long range air warning) installation as Project 70. Subsequent GCI installations were designated Projects 89, 90, and 91, even though the SCR-527 mobile GCI set superseded the stationary SCR-588. New long range air warning installations were referred to as Project 71 and so on.

6 The directive effecting this change is not available to the writer, but it is certain that it was issued later than 27 July, 1943, as a letter of the Director of Aviation on that date outlined the air warning program as it was first planned. See DIRAVN conf ltr to CG, MAWPAC, DA-09882 over AA-365-da, dated 27 July, 1943.

7 The Commandant had established a program calling for the organization of two air warning groups, two headquarters and service squadrons, nine air warning squadrons, and two air transportable air warning squadrons between 1 July, 1943, and 30 June, 1944. One headquarters and service squadron, one air warning squadron, and one air transportable air warning squadron were to have been formed at Cherry Point, on 1 July, 1943. The total personnel required amounted to forty-four Marine officers, one Navy officer, 262 Marine enlisted, and six Hospital Corpsmen. Actually only a headquarters and service squadron was organized on that date. See CMC conf ltr to CG, 3rd MAW, AO-382-pjd over 03C15643, dated 12 June, 1943.

8 Air Warning Squadron One was formed 1 September, 1943, with Captain William D. Felder, Jr., USMCR, of Dallas, Texas, as commanding officer. Air Warning Squadron Two was commissioned 25 September, 1943, with Captain George T. C. Fry, USMCR, of Upper Montclair, New Jersey, as commanding officer. See 3rd MAW General Orders Nos 17-1943 and 20-1943, dated 1 September and 25 September, 1943, respectively.

9 See CMC conf ltr to CG, 3rd MAW, AA-365-ha over DA-011833 over 07C28543, dated 14 October, 1943.

10 Air Warning Squadron Three was commissioned 12 October, 1943, by 3rd MAW General Order No 24-1943, of the same date. Captain Harold W. Swope, USMCR, of Harrisburg, Pennsylvania, was commanding officer. Air Warning Squadron Four was commissioned 1 November, 1943, by 3rd MAW General Order No 29-1943, with First Lieutenant John D. Taylor, USMCR, of Morganton, North Carolina, as commanding officer. He was succeeded on 12 November, 1943, by Captain John M. von Almen, USMCR, of Scarsdale, New York. Air Warning Squadron (air transportable) Five was commissioned 1 December, 1943, by 3rd MAW General Order No 32-1943, of the same date. The commanding officer was First Lieutenant Donald D. O'Neill, USMCR, of Chappaqua, New York. Air Warning Squadrons One and Two were transferred

to Miramar on 15 November, while Squadrons Three and Four were transferred on 6 December and 30 December, 1943, respectively. The authority for these movements is contained in 3rd MAW secret Special Orders Nos 330-1943, 350-1943, and 374-1943, dated 10 November, 3 December, and 28 December, 1943, respectively.

11 DIRAVN conf ltr AA-365-mkc over DA-012497, dated 4 November, 1943.

12 The commanding officers were Captain Clarence C. Gordon, USMCR, of Des Moines, Iowa, and First Lieutenant Herbert C. Storey, USMCR, of San Diego, California. See 3rd MAW General Order No 36-1943, dated 31 December, 1943.

13 Air Warning Squadron Seven with Captain Geoffrey A. Sawyer, USMCR, of Gloucester, Massachusetts, commanding was commissioned on 1 February, 1944. This was done by authority of 3rd MAW General Order No 1-1944, dated 27 January, 1944. The same order commissioned Air Warning Squadron (air transportable) Fifteen, with First Lieutenant Craig W. Parris, USMCR, of Fort Worth, Texas, commanding. Air Warning Squadron Eight and Air Warning Squadron (air transportable) Twenty were formed on 1 March, 1944, by authority of 3rd MAW General Order No 6-1944, dated 24 February, 1944. The commanding officers were Captain Frank B. Freese, USMCR, of Easton, Pennsylvania, and First Lieutenant Lloyd B. Hatcher, USMCR, of Atlanta, Georgia, respectively. Air Warning Squadrons Nine and Eleven were commissioned 1 April, 1944, by 3rd MAW General Order No 11-1944, dated 28 March, 1944. They were commanded by Captain Leon H. Connell, USMCR, of Los Angeles, California, and Captain John L. Carnegie, USMCR, of Miami, Florida. Air Warning Squadron Twelve was commissioned by the Ninth Marine Aircraft Wing on 1 May, 1944, by its General Order No 7-1944, dated 27 April, 1944. Captain Emil H. Heintz, USMCR, of Upper Darby, Pennsylvania, was designated commanding officer. On the fifth of that month, Air Warning Squadron Thirteen was commissioned by 9th MAW General Order No 9-1944, dated 4 May, 1944, with Captain William A. McCluskey, Jr., USMCR, of Hastings-on-Hudson, New York, commanding. Air Warning Squadrons Fourteen and Sixteen were formed 1 June, 1944, by authority

of 9th MAW General Order No 16-1944, dated 30 May, 1944. Captain Lumir F. Slezak, USMCR, of San Pedro, California, commanded Squadron Sixteen, and Captain Edward R. Stainback, USMCR, of White Plains, New York, commanded Squadron Fourteen. No further squadrons were commissioned until 10 August, 1944, when 9th MAW General Order No 38-1944, dated 9 August, 1944, established Air Warning Squadron Seventeen with Major Richardson Dilworth, USMCR, of Philadelphia, Pennsylvania, commanding. The last squadron formed was Air Warning Squadron Eighteen, commissioned 1 September, 1944, by 9th MAW General Order No 47-1944, dated 30 August, 1944. The commanding officer was Major John V. Collins, USMCR, of Evansville, Indiana.

During the calendar year 1944 the following squadrons were transferred to Air Warning Group Two on the West Coast:

AWS(AT) 5 transferred from 31 January to 10 February, 1944
AWS 6 and AWS(AT) 10 transferred 1 March, 1944
AWS 7 and AWS(AT) 15 transferred 1 April, 1944
AWS 8 and AWS(AT) 20 transferred 1 May, 1944
AWS 9 and AWS 11 transferred 5 June, 1944
AWS 12 transferred 15 August, 1944

During the same period Air Warning Squadron Thirteen was transferred to the Naval Air Station, Vero Beach, Florida, on 10 August, 1944, and Air Warning Squadron Fourteen to the Marine Corps Auxiliary Air Facility, Congaree Field, Columbia, South Carolina, on 27 November, 1944.

The directives effecting the above movements may be found in the following 3rd MAW secret Special Orders: No 27-1944, of 28 January, 1944; No 54-1944, dated 28 February, 1944; No 56-1944, dated 28 February, 1944; No 78-1944, dated 22 March, 1944; No 79-1944, dated 22 March, 1944; and the following 9th MAW directives: secret Special Order No 29-1944, dated 29 April, 1944; secret Special Order No 30-1944, dated 29 April, 1944; secret Special Order No 62a-1944, dated 2 June, 1944; secret Special Order No 63a-1944, dated 2 June, 1944; restricted Transfer Order No 247-1944, dated 5 August, 1944;

secret Transfer Order No 261-1944, dated 8 August, 1944; and restricted Transfer Order No 620-1944, dated 11 November, 1944.

14 See CO, 1st MAWG, secret ltr to CMC, A7-2/ECB/ker, dated 8 May, 1944, with CO, 9th MAW endorsement A4-3/ews, over W # 00105, dated 10 May, 1944. The increased personnel allowance referred to by Colonel Schilt was authorized by Table of Organization E-691, approved 18 March, 1944. It is discussed later.

15 See confidential brief of this conversation dated 13 May, 1944.

16 Due to personnel shortages three filter officers were not supplied to any squadron prior to transfer. Air Warning Squadron Eight had one and Air Warning Squadron Twelve two. This shortage developed because of the lag between the promulgation of the table of organization and the training of the officers in the Signal Corps School at Tampa, Florida. As these officers reported, the shortages in squadrons previously transferred were filled. Filter officers have since been redesignated radar operations officers.

17 Control center equipment kept pace with the demands from the Pacific, and in the late winter of 1943-44, the AN/TTQ-1 (Joint Army-Navy Transportable Telephone Equipment) was furnished to air warning units.

18 Due to inherent differences in design, the new radar sets do not exactly supersede the old. For example, the old SCR-527 operated independently of the SCR-602, while the AN/TPS-1B and SP-1M are designed for integrated operations. In fact, the SP-1M cannot be operated for GCI controlling without the AN/TPS-1B.

19 The ADCC sections in the table of organization were labeled A and B, respectively; however, these sections taken together would form only one ADCC and not two as it would appear. The AN/TTQ-1 equipment was designed for flexibility of operations so that it could be divided into two complete units for the operation of one or two smaller control centers in the early stages of an operation, and then after the initial phases be reassembled into a regulation ADCC. Thus, the assault echelon ADCC section would contain half an AN/TTQ-1 and associated

personnel and equipment, while the rear echelon ADCC section would consist of the remaining personnel and equipment required to make a complete ADCC after the assault phase was completed.

20 See CMC conf ltr to CG, 3rd MAW, AA-365-ha over 07G30143, dated 1 November, 1943.

21 See CO, 1st MAWG conf ltr to CMC, KV53(AWG-1)/P11-1/JAS/ker over Number 86-1943, dated 26 October, 1943; and DIRAVN conf ltr to CO, 1st MAWG, AA-544-nfh over DA-012557, undated.

22 See CO, 1st MAWG conf ltr to CMC, KV53(AWG-1)/A1/JAS/jpc, dated 26 November, 1943, with enclosures.

23 In a letter dated 15 December, 1943, the Commandant authorized a ground observer division of three officers and eighty-one men. CMC ltr to CO, 1st MAWG, 2385-60 over AO-382-fjd over MC-168284. This plan was never used because of a shortage of ground observers and later adverse decisions on its desirability.

24 See CO, 1st MAWG conf memo to CG, 3rd MAW, dated 15 December, 1943.

25 The confidential report of this operation is a model of careful detailed planning and of intelligent evaluation of field experiences. The report is complete in every detail including photographs.

26 See memoranda of telephone conversations between Lieutenant Colonel Best and Colonel Edward C. Dyer of the Air Defense Section, on 27 January, 1944; CO, 1st MAWG conf ltr to CG, 3rd MAW, KV53(AWG-1)/A4-3/JAS/ker, dated 4 January, 1944; and 3rd MAW secret Special Order No 27-1944, dated 28 January, 1944.

27 See CO, AWG-2 ltr to DIRAVN, P16-3(2)/wjh over (42-44), dated 22 February, 1944. Lieutenant O'Neill's report contained therein shows just how scattered the squadron became. For example, on the evening of 10 February separate details of the squadron were located at Florence, South Carolina, Fort Worth, Dallas, and Big Spring, Texas, Tucson, Arizona, and Camp Kearney, and Miramar, California. One plane did not reach California until 14 February.

28 See CO, 1st MAWG conf ltr to CMC, KV53(AWG-1)/A2-2/JAS/ker, dated 17 March, 1944; and CMC conf ltr to CG, MAWPAC, AA-713-ha over 07H18944, dated 10 July, 1944.

29 See CMC secret ltr to CO, 1st MAWG, AA-713-ha over 007E30844, dated 2 November, 1944; COMINCH conf airmailgram 201805 (October, 1944); MARCORPS conf airmailgram 241647 (October, 1944); and CMC conf ltr to CG, AIRFMFPAC, AA-713-ha over 07P30544, dated 30 October, 1944.

30 CMC conf disp 062232 (November, 1944).

31 See COMINCH secret endorsement, FF1/A16-3 over Serial 003110, dated 25 October, 1944, to CMC secret ltr to COMINCH, AA-713-ha over 007E28544, dated 16 October, 1944.